

# BUILDING THE VISION

A Series of AZTech ITS Model Deployment Success Stories for the Phoenix Metropolitan Area

## NUMBER THREE

### Well Connected

#### Linking U.S. Highway 60 with the Trailmaster System

##### **The Challenge:**

Bridging gaps and creating connections are key functions of AZTech. An existing \$250 million infrastructure of advanced technology provides AZTech with a solid foundation. Integrating and extending that infrastructure is no minor challenge.

The Arizona Department of Transportation's (ADOT) Trailmaster Freeway Management System is integral to AZTech. Trailmaster provides state-of-the-art traffic management through a variety of electronic means, such as collecting and distributing traffic information via cameras and detectors. Trailmaster has currently been implemented on some 50 miles of freeway in the Valley of the Sun.

Trailmaster has not yet arrived, however, at a highly traveled eight-mile section of U.S. Highway 60 between Interstate 10 and Gilbert Road in the East Valley. In fact, the expansion of Trailmaster is not expected to reach this stretch of highway for two to three years. In the meantime, the need for traffic management is urgent. To install traditional traffic detection devices, which would relay information to the ADOT Traffic Operations Center (TOC) via telephone lines, would present a major cost. Identifying a cost-effective alternative became an AZTech priority.

##### **The Solution:**

Crossing boundaries is fundamental to AZTech's philosophy. By enlisting the participation of various regional, state and local agencies, AZTech successfully integrates transportation management systems across jurisdictional lines. Cultivating multi-agency connections helps AZTech optimize its impact and minimize costs for all agency partners. This interjurisdictional approach also lends itself to the development of innovative solutions.

To furnish the eight-mile section of U.S. Highway 60 with an effective system of traffic management, AZTech deployed a traffic detection system called the Radar Traffic Monitoring System (RTMS). The RTMS, which is expected to be operational by mid-October 1998, represents the first major application of radar-based traffic detection devices in the Phoenix metropolitan area. Sensors installed on the side of the roadway are able to count vehicles and gauge speeds by sending radar patterns across each of the eight lanes.

Traffic detectors were installed in one-mile increments along the U.S. Highway 60 segment. Transferring the data from these sensors to the ADOT TOC requires a team effort. The RTMS data is transmitted via spread-spectrum radio to a microwave tower. From this connecting point, the real-time data is relayed to the ADOT TOC via the Mesa TOC and the AZTech telecommunications network. As the focal point for the statewide Trailmaster system, the ADOT TOC serves as the communications hub

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of AZTech. "We use the shortest path to relay the data to the closest AZTech partner's facility, and from there it's onto the AZTech backbone," explains Pierre Pretorius, AZTech program manager.

"Using this combination of technologies allowed us to effectively expand the Trailmaster system via AZTech's infrastructure," said Jim Decker, AZTech smart corridor coordinator. "We didn't have to reinvent the wheel."

**The Benefits:**

Employing new technologies and strong partnerships provided AZTech with the timely, cost-effective solution it needed to link the stretch of U.S. Highway 60 via another partner with its communications backbone. And thanks to multi-agency collaboration, the benefits were amplified. "Through some innovation and by making use of the opportunities of institutional integration, we achieved significant cost savings," said Pretorius.

Prior to the AZTech project, none of the operations centers located throughout the Phoenix area were connected in any kind of a communications network. The communications infrastructure developed for AZTech will connect the majority of the traffic, emergency services and transit operational centers in the Valley.

The RTMS also presents AZTech with other long-term benefits. "It's a portable technology," said Decker. "So when the Trailmaster system does expand to that area, we can pick up everything we've installed and move it down the road and it will still be just as effective."

**As an international showcase for state-of-the-art Intelligent Transportation Systems, the AZTech Model Deployment Initiative has documented numerous success stories. To learn more, visit the AZTech home page on the Internet at <http://www.azfms.com>.**